

Mr Jeffrey Hardy
Head of Sustainable Energy Strategy
Consumers and Sustainability
Ofgem
9 Millbank
London
SW1P 3GE

Wales & West House
Spooner Close
Celtic Springs
Coedkernew
Newport NP10 8FZ

Tŷ Wales & West
Spooner Close
Celtic Springs
Coedcernyw
Casnewydd NP10 8FZ

Telephone/Ffôn: **0800 912 29 99**
Fax/Ffacs: **0870 1450076**
Email/Ebost: enquiries@wwutilities.co.uk
www.wwutilities.co.uk

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Non-traditional Business Models: Supporting Transformative Change in the Energy Market

Dear Jeffrey,

Wales & West Utilities Limited (WWU) is a licensed Gas Distribution Network (GDN) providing Gas Transportation services for all major shippers in the UK. We cover 1/6th of the UK land mass and transport gas to over 2.4 million supply points.

We would like to share a few comments from a gas network perspective.

Our first observation is that the consultation was almost entirely electricity focussed and while we acknowledge that most of the activity has been in that area we think that there are applications in gas as well. Examples of this are in areas such as standalone networks for off gas communities. More widely we think that there is an area of work related to the interaction between gas and electricity networks and whether and how network operators can or should be rewarded for actions that benefit parties using the other network. As an example WWU is seeing an increasing number of small generating plants connecting to our network, these will generate intermittently to support the electricity network at times when renewable generation drops off and we have been trying to facilitate their connection and meet their needs for flexibility although the benefits from this entirely accrue to the electricity market.

Chapter 3 of the consultation recognises the concept of prosumers – consumers who both consume and produce energy. Typically they will generate electricity for example from solar panels; however with the potential of domestic Combined Heat and Power this could have a cross fuel element with the gas network being able to support local electricity generation.

Chapter 3 also recognises the concept of the peer to peer model whereby a producer of energy does so with the view to providing it a single consumer or to particular consumers for example a community wind farm supplying that community. Our interest in this area is in the area of biomethane and power to gas.

With respect to biomethane the following scenario could occur. A producer of feedstock supplies the operator of an anaerobic digester which produces biomethane which is injected into the gas network. If the gas network is constrained so that it cannot take the maximum output of the producer at all times then the two parties may want to agree that the feedstock producer will take gas at particular times as anaerobic digesters cannot adjust their output over a day to

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meet troughs in demand. The two parties may find it mutually beneficial to agree this arrangement although the network operator will need to be able to use its powers under the Network Entry Agreement to stop injection if the network does not have the capacity available.

Probably the greatest challenge in this area is the growing interest in Power to Gas whereby renewable generation is used to produce hydrogen by electrolysis of water. This hydrogen can then be either used in a hydrogen network, combined with Carbon Dioxide from an anaerobic digester to produce methane that can be fed into the existing natural gas network, or subject to a derogation be fed into the natural gas network to create a natural gas / hydrogen blend. There are various gas related challenges to these models but there is also one relating to electricity distribution.

Renewable generation can be constrained off at various times owing to various reasons and many parts of the local electricity distribution system in SW England and South Wales is not able to accept new renewable unconstrained generation. There is therefore increasing availability of unused generation which can be generated at virtually zero marginal cost which could be used to produce an easily storable form of energy. While battery technology may provide this storage it seems sensible to pursue all routes and using the gas network in some way maximises the benefit from the renewable generation. The issue is if the constraint is at a substation whether the generator would be able to generate and use the distribution system as long as the demand was between the generator and the constraint. Coupled with this is what costs would be attributed to this usage since it would only be using assets that would not otherwise be used. It seems sensible to try and develop arrangements that maximise the use of available renewable generation for the benefit of UK energy markets in general rather than just looking at the electricity industry.

We realise that in neither of the above cases we do not have a solution, we are more identifying areas where further work or clarity of what options are possible but not currently available is required.

Yours sincerely,



Steve Edwards
Head of Regulation
Wales & West Utilities

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Wales & West Utilities Limited
Registered Office:
Wales & West House, Spooner Close, Celtic Springs,
Coedkernew, Newport NP10 8FZ
Registered in England and Wales number 5046791